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PA - (A)

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IN - (A)

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TI - (A)

 PLANETARY GEARS

AB - (A)

PURPOSE: To prevent vibration and make reduction of offensive gear noise possible by making meshing in the same phase possible at respective meshing points of sun and annulus gears in a gear group that transmits torque from the sun gear to the annulus gear through two pinion gears.

CONSTITUTION: Provided that the number of teeth in the crossed axes angle α of a first pinion gear 2 is an integer $+0.75$, for example, the number of teeth in the crossed axes angle β of a second pinion gear 3 becomes an integer $+0.25$, and the sum of these numbers becomes an integer $+1$, which is an integer too. Further, as the tooth flanks that mesh together on the driving side and the driven side are respectively on the opposite side, they are in the same phase at the meshing points A and B when the decimal part a of the number of teeth within the crossed axes angle α equals to 0.25 , and in the reverse phase when the a is 0 , and the same thing comes into being at the meshing points B and C as to the decimal part b of the number of teeth within the crossed axes angle β too. Therefore, when $a+b=1$ or 0 , they are in the same phase at the meshing points A and C. Next, when the meshing at the meshing points A and C is in the same phase, the moment due to the tangential force moving round a shaft and acting on a carrier at both meshing points, or the variation element of the moment strictly speaking, acts at the same time, and counteracts.

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